Title: ANTHRACYCLINE INDUCED CARDIOTOXICITY IN CHILDHOOD CANCER SURVIVORS

Authors: Aruna Alahari Dhir*, Sheela Sawant*, Anuprita Daddi *,Purna kurkure#

Affiliation:*Dept of General Medicine ,Tata memorial hospital, Mumbai, India

Dept. of Pediatric oncology, Tata memorial hospital, Mumbai, India

Presenting author: Aruna Alahari Dhir Number of characters 1993

AIMS & OBJECTIVES: To determine the incidence and risk factors for development of late anthracycline induced cardiotoxicity in childhood cancer survivors.

METHODS: Analysis of prospectively collected data from 2010 to 2016 of Childhood cancer survivors registered at the After Completion of Treatment clinic ,who have received anthracyclines. Demographic and treatment details were recorded. Effect of age, gender, duration of monitoring with left ventricular systolic function, cumulative dose of doxorubicin , mediastinal irradiation and other chemotherapeutic drugs on development of LV dysfunction was studied. Cardiac function was assessed by 2DEchocardiography.Subset analysis of patients with asymptomatic Left ventricular dysfunction(ALVD) was done. Descriptive analysis of categorical variables and multivariate logistic regression analysis of predictor variables and response to treatment was done.

RESULTS: 576 patients males 431 (74.8%), females 145(25.2%) were included in the study. 11.8%(68/576) patients developed cardiotoxicity. The median age at presentation was 6.5 years. The median dose of anthracyclines was 300mg/m2 (range 40-600 mg/m2). The median duration of follow up was 9.8 years. The median duration from completion of therapy to development of cardiotoxicity was 10 years. Doxorubicin dose more than 300 mg/m2, longer duration of follow-up and vincristine based chemotherapy significantly increases CMP risk ($p < 0.01$). Most patients 58/68 (85%) had grade I cardiotoxicity and were asymptomatic. In patients with AVLD, 10 patients had received doxorubicin < 200 mg/m2. 34/46(71.3%) treated patients showed response to anti failure therapy.12/58 were not treated, of these 9/12(75%) had recovery of LVEF to 55%. Combination chemotherapy with methotrexate was significantly associated with nonresponse p=.01

CONCLUSIONS: Doxorubicin dose more than 300mg/m2 and combination treatment with vincristine showed an increase in the risk of cardiotoxicity. ALVD can occur late after completion of chemotherapy and can occur at lower doses. Combination chemotherapy with methotrexate was significantly associated with nonresponse to antifailure therapy. Until cardiotoxiciy can be eliminated childhood cancer survivors need to be followed up for early detection and treatment of toxicity.